DOCUMENT RESUME

ED 137 671 CG 011 257

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TITLE Intergroup Attitudes as a Function of Group Proximity and Task Orientation.
PUB DATE May 76
NOTE 17p.; Paper presented at the Annual Meeting of the Midwestern Psychological Association (Chicago, Illinois, May 6-8, 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Attitudes; *Distance; *Group Dynamics; *Intergroup Relations; Males; Relationship; Research Projects; Social Psychology; *Space Orientation; Speeches; *Task Performance

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Intergroup Attitudes as a Function of Group Proximity and Task Orientation

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Paper presented at the Group Dynamics Session at the annual meeting of the Midwestern Psychological Association, Chicago, May 6-8, 1976.

CG011257

Abstract

Post-experimental seating patterns of two coacting, cooperating, or competing laboratory groups were factorially manipulated such that groups sat near, far, or randomly with respect to each other. A propinquity-attraction model predicted intergroup evaluations only to the extent that previously determined territorial preferences were not violated.

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A frequent, though perhaps not necessary consequence of social interaction between groups is the development of ethnocentric attitudes and stereotypes. Ingroups, ingroup members, and ingroup products tend to be evaluated more positively than outgroups, outgroup members, and outgroup products (Blake & Mouton, 1961; Bass & Dunteman, 1963; Ferguson & Kelley, 1964), and this attitudinal differentiation obtains reliably under rather minimal conditions of intergroup contact (Kahn & Ryen, 1972; Rabbie & Horowitz, 1969).

One variable which has been demonstrated to affect this differentiation between ingroup and outgroup is intergroup task orientation. The classic study by Deutsch (1949) clearly demonstrated that group attitudes varied depending on whether the groups were "contriently" or "cooperatively" interdependent. Groups with competitive task orientations were generally less ethnocentric than cooperative groups. Further, winning or losing feedback in competitive situations tends to respectively increase or decrease the evaluative preference for ingroup over outgroup (Wilson & Miller, 1961; Kahn & Ryer, 1972).

A study by Ryen and Kahn (1975) found general support not only for the effects of intergroup task orientation on attitude differentiation, but further demonstrated that subjects seating patterns varied predictibly with task orientation and with group attitudes. Coacting groups of subjects showed little preference for ingroup to outgroup, and neither did they vary from a totally random seating pattern. However, cooperating groups tended to sit near one another, and competing groups, far from one another. When one group was given winning feedback, that group tended to "approach" the losing group, while the losers remained in the more distant seating positions (and to avoid eye contact with the winners). These findings suggested that group membership under the various intergroup task orientation conditions elicited two distinct types of expectancy: (1) expectations concerning the attitudes one should hold both within and between groups, and (2) expectations concerning appropriate behavior (proxemic patterns) within and between groups.

For the present investigation, it was reasoned that violations of these apparent proxemic or territorial expectations should have a significant impact on intergroup attitudes.

Method

Subjects

The subjects were 180 undergraduate male students enrolled in introductory psychology courses at Iowa State University, who vol-

unteered in return for course credit. Subjects were run six at a time, in two separate triadic groups, and all members of a given group were initially unacquainted.

Design and Overview

The design was a 5 x 3 factorial, manupulating five levels of intergroup orientation, and three levels of intergroup seating pattern. For the intergroup orientation conditions, subjects believed the two groups were either (1) Coacting, (2) Cooperating, (3) Competing, without relative performance feedback, or competing, receiving (4) Winning feedback or (5) Losing feedback.

Following performance of the experimental task, subjects were instructed to return to a waiting room and complete experimental questionnaires. These questionnaires had been preplaced so that the two groups would sit (1) Near, (2) Far, or (3) Randomly with respect to each other. The primary dependent measure was ingroup bias (Kahn & Ryen, 1972), a measure of relative evaluation of the ingroup to the outgroup.

Procedure

When subjects arrived for the experiment they were immediately and randomly assigned to one of two experimental rooms and told they were members of that group. If two subjects arrived simultaneously, each was assigned to a different room. When both groups had been filled with three members each, tape instructions were played which gave the intergroup orientation and explained the nature of the task. The same instructions were given simultaneously to each group. In addition, each subject was given an identification letter, which he was asked to remember.

After the two groups had worked on the group problem solving task for 15 minutes, subjects were requested to stop working on the task. In the competition with feedback conditions, one group was publically declared the winner, and the other, the loser of the contest, on the basis of total group performance. At this time, all subjects were instructed to return to a large waiting room and to complete the questionnaires corresponding to their identification letters, while the experimenter finished recording the data. Subjects were told this procedure was necessary because each subject was to complete a slightly different questionnaire, and that it was important that each subject completed the correct one.

These questionnaires had been preplaced at particular locations around four large tables, such that if the subjects sat at those seats, seating patterns between groups were either far, near, or random.

The subjects then completed the questionnaire, containing the own group bias measure, and a number of manipulation check and subject perception items.

Following completion of the experimental questionnaires, subjects were questioned about the experiment, fully debriefed, given experimental credit for their participation, and dismissed.

Intergroup Orientations

The coacting condition was included to assess the effects of a second, but noninteracting group on subsequent group evaluations. In this condition, subjects were informed that another group was present, but they were led to believe this was merely for experimental convenience and that the performance of each group was entirely independent. In the cooperating condition, each group believed their own performance was interdependent with the performance of the other group such that good performance by either group resulted in the simplification of the task for the other group. In the competing no feedback condition, each group believed that its successful solution of a problem resulted in increased task difficulty for the other group, and vice versa, such that the task success of either group was detrimental to the accomplishments of the other.

In these first conditions, the groups received no evaluation of their performance. In additional conditions, competing with feedback, the orientation manipulation was identical to the competing no feedback condition, except that after task completion, one triad was publicly declared the winner and the other the loser. Winning and losing were based on the relative number of problems "solved", which was arbitrarily determined by the experimenter.

Intergroup Seating Patterns

The seating patterns of the groups were manipulated by placing the questionnaires of the subjects at predetermined locations around the four large tables in the waiting room.

In the Near condition, the ingroup materials were placed around the same table as the materials for the other group, the outgroup. The materials for one group were placed along the diagonal of the table closest to that group's experimental room, along one side and one end of the table. The materials for the second group were placed at the same table in corresponding positions on the opposite side of the diagonal. The average intragroup seating distance was 4.25 feet (S.D.=1.88'), and the average intergroup distance 5.44 feet (S.D.=1.35').

In the Far condition, ingroup materials were placed at a different table from the outgroup materials, with both groups materials placed on the diagonal sides of their respective tables closest to a group's experimental room. The average intragroup distance in the Far condition was 4.25 feet (S.D. = 1.88'), and the average intergroup distance 19.67 feet (S.D. = 1.43').

In the Random condition, the materials of both groups were placed randomly with respect to both intragroup and intergroup seating patterns, with the restriction that no two individuals were sitting directly adjacent to one another. The average intragroup distance in this condition was 8.94 feet (S.D. = 3.22'), and the average intergroup distance 9.13 feet (S.D. = 2.89').

Task

The experimental task was identical for all subjects. It required a group effort in solving a series of simple number problems. More specifically, the task involved a trial-and-error process on the part of the subjects in matching a list of simple four-digit patterns. Group choices for a particular digit sequence were registered by activating switches on a apparatus, corresponding to their choices. This experimental apparatus was connected to a control panel in an adjacent room. Whether a given choice was "correct" or "incorrect" was indicated by lights on the apparatus which were controlled by the experimenter. Groups were required to make at least one choice every five seconds.

In reality, there was no correct or incorrect choices, and all feedback was programmed by the experimenter. Consequently, all groups were given success feedback concerning their choices approximately every 30 seconds, such that all groups regardless of experimental condition received nearly identical performance feedback.

The task was purposely ambiguous so that subjects would find assessing inputs and outcomes difficult. Thus some measure of control could be exerted both on group performance and on perceived group competence.

Room

The layout of the large room is illustrated in Figure 1. The room was 40' x 40' and contained four large tables (4' x 6') with six chairs around each. All 24 chairs were neatly placed around the tables, and the tables were cleared. The tables were arranged symmetrically such that two were equidistant from the entrances of both experimental rooms, one near (12') both rooms and one far (27') from both rooms. The two remaining tables were placed at an intermediate distance, each centered 15' from the entrance of one room, and 24' from the other room.

Dependent Measures

The primary dependent measure was ingroup bias (Kahn & Ryen, 1972). The questionnaire consisted of eleven semantic differential type adjective parts loading heavily on the evaluative dimension on which both ingroup and outgroup are rated. In making evaluations of the ingroup, the individual was specifically instructed not to rate a specific person. Ingroup bias is then determined by subtracting the composite score for the outgroup from the score for the ingroup. If the ingroup is rated higher than the outgroup, then the own group bias score is positive, if lower, it is negative; the more positive the score, the greater the own group bias.

Additional dependent measures were included to assess possible sources of artifact in the experimental procedure, and to assess the effectiveness of the manipulations. These included a measure of perceived group competence, a measure of perceived pressure from the experimenter to sit in particular positions, and a measure of perceived pressure from the ingroup to sit in particular patterns with respect to both the ingroup and the outgroup.

Results

Effects of intergroup orientation

Much in line with the findings of Ryen and Kahn (1975), intergroup orientation had a significant effect on ingroup bias scores ($F4,165 = 19.44$, $p < .001$). Coaction produced the smallest overall effect on ingroup bias, cooperation and losing produced a slightly larger bias, competition with no feedback a large bias, and winning an even larger bias. Only the difference between cooperation and losing did not reach significance at the $p = .05$ level, using t - tests. The mean own group bias scores are included in Table 1. The effects of orientation were significant also on ingroup evaluations taken alone ($F4,165 = 5.16$, $p < .001$), but not on outgroup ratings ($F < 1$, n.s.). The means for ingroup ratings are included in Table 2, and for outgroup ratings, in Table 3.

Insert Tables 1, 2, and 3 about here

Effects of intergroup seating position

It was hypothesized that near seating would produce the least in group bias (except in the competition no feedback and winning conditions), and that far seating should produce the greatest bias, with random seating producing moderate levels of bias. This hypothesis was generally supported. A significant main effect for seating position on own group bias was obtained ($F2,165 = 10.23$,

$p < .001$). Far seating produced the greatest ingroup bias, and random seating, a moderate bias. Near seating produced a smaller difference in group evaluations as predicted, except for competitive no feedback and winning groups, where, as predicted, a significant interaction occurred ($F_{8,165} = 5.58$, $p < .001$). The mean ratings for these two conditions both differed significantly from the means for the other near seating positions (coaction, cooperation, losing) ($ts\ 46 = 6.19$, $ps < .001$), as well as from the means of the other cells within that orientation condition (random, far) ($ts\ 34 = 3.81$, $ps < .001$). In addition, omitting the no feedback and winning data from the near condition, the average ingroup bias score becomes significantly smaller than in the random and far seating conditions ($t\ 154 = 2.78$, $p < .01$).

The findings for the effects of seating position on ingroup bias are interesting, in that the obtained trends are not strongly reflected either in the analysis of ingroup ratings ($F\ 2, 165 = 1.21$, n.s.) or of the outgroup ratings ($F < 1$) taken alone. Neither are significant interactions obtained between Orientation and Seating Position for either the ingroup ($F < 1$) or the outgroup ($F\ 8,165 = 1.32$, $p < .25$). However, there was a slight but insignificant trend for competition no feedback and winning groups in the Near condition, to rate the ingroup higher and the outgroup lower than in the other seating conditions. This trend is obscured by the overall nonsignificance of seating position treatments for ingroup and outgroup scores.

An additional analysis was undertaken, for purposed of comparison, using randomly selected data from a comparable study by Ryen and Kahn (1975). In this former study, seating preferences for the various orientation conditions were obtained. Thus, it was possible to compare own group bias scores for the "preferred" seating positions in the original study, with the data in the present study in which seating position was manipulated. Comparable seating positions across studies existed for the coaction, cooperation, and competition no feedback conditions, but not for winning and losing. The analysis suggests that ingroup bias scores did not differ significantly between the two studies for comparable seating positions ($ts\ 22 = 1.32$, $ps > .20$).

Perceived freedom of seating choice

Of central importance to the interpretations of these data was the perceived freedom of the subjects across conditions to choose any seat they wished. Obviously, if they felt they had no hand in the determination of their seating positions (i.e., they were forced by the experimenter to sit in particular seats), then any attributions the subject might make concerning his own or someone else's seating behavior would need consider only the experimenter's instructions.

Subjects rated perceived freedom of seating on a 7-point scale (1 = completely free, 7, no freedom). An ANOVA revealed no differences across conditions on this measure ($Fs < 1$). Cell means ranged from 1.87 to 2.66; all ratings fell toward the free choice portion of the scale. Similar trends were obtained for a measure of perceived freedom of the other subjects to sit as they wished. Since in no instance did any subject choose a set other than the intended ones, subjects were administered an open-ended questionnaire asking why they chose seating position as they had. Fifty eight per cent responded, it required less effort than moving to another seat would have required; 25% said they didn't want to get the questionnaires mixed up for the experimenter; and the remaining 17% either did not know, or gave idiosyncratic responses, none of which indicated suspiciousness of seating position as an independent variable. In fact, when apprised of the actual independent variable, most subjects expressed surprise.

Discussion

Variations in intergroup task orientation generally had the expected effects on intergroup attitudes, much in line with previous research (Ryen & Kahn, 1975). Coaction yielded a very slight ingroup bias, cooperation a moderate bias, and competition a very strong bias, with winning and losing feedback respectively increasing and decreasing the competitive bias. These findings probably reflect cognitive and attitudinal differentiation between ingroup and outgroup based on the attribution of differential reward structures and dependency relationships between groups. Coaction connotes the absence of functional relationships between groups, while cooperation connotes a positive dependent, and competition, a negative dependent, relationship (Okun & DiVesta, 1975). Although relationships within groups should tend toward cooperation, intragroup attitudes appear to be significantly influenced also by the nature of interrelationships between groups.

The relationship between intergroup task orientation and seating pattern appears to be very complex. Some of the early group dynamics literature (Festinger, Schachter, & Back, 1950, for example), suggested that group propinquity and attraction were intimately related. Sommer (1969) and Ryen and Kahn (1975) have suggested that coacting, cooperating, and competing individuals and groups tend to exhibit different proxemic patterns and preferences. In the present study, when group seating patterns coincided with empirically derived seating preferences, group attitudes were almost identical to those obtained in a free-seating situation (Ryen & Kahn, 1975), with ingroup-outgroup comparisons tending toward neutrality for coacting groups, becoming slightly biased for cooperation, and becoming highly biased for competition.

Based on these findings, it might be suggested that once as ingroup-outgroup differentiation becomes functionally salient to the individual, a positive relationship obtains between intergroup distance and intergroup liking (Lott & Lott, 1972). However, when these proxemic preferences are violated, a more complex pattern emerges. In general, random seating yielded a moderate ingroup bias which was not highly variable across conditions. Far seating senerally produced a large ethnocentric tendency which also tended toward consistency across conditions. However, for near seating, attitudes were highly variable across orientation conditions. In coaction, cooperation, and losing conditions, sitting closer tended to neutralize the effect of ingroup bias, but near seating in competition and winning conditions produced extremely high levels of differentiation.

An attributional analysis may be useful in explicating these findings. Kelley and Stahelski (1970) contend that individuals use differential perceptual schemata for cooperators and competitors (and presumably between ingroup and outgroup; Tajfel, 1969). Competitors are hypothesized to attribute competitive dispositions to opponents, while cooperators tend toward more "accurate" dispositions to others. If we then assume that violations of proxemic expectations interact with these differential perceptual schemata, far seating could be attributed as decreased liking in more positively dependent orientations (coaction, cooperation, losing) where expectations are violated, or as fulfilling competitive expectations in negatively dependent conditions. Near seating could be perceived as greater liking or as fulfilling expectations in positive dependency conditions, but as territorial invasion or threat in the negative conditions.

A major difference in seating patterns between the random condition and the near and far conditions was the fact that within and between group seating patterns were not manipulated factorially. Random seating was random for both ingroup and outgroup, but ingroup seating was near in both near and far intergroup conditions. Attitude differentiation between groups was minimal in the coaction condition, but not for the other conditions, suggesting that the distinctiveness and salience of the ingroup-outgroup proxemic boundary may enhance or maintain the perception of group differentiation.

The implication is that any factors which serve to blur the perceptual boundaries between categories for ingroup and outgroup should also serve to decrease the cognitive and behavioral differentiation between groups. Further, the relationship between proximity and liking is not a simple positive relationship, since qualitative differences in the context of the interaction have been demonstrated to exert significant effects.

INTERGROUP ORIENTATION

INTERGROUP SEATING PATTERN	Coaction	Cooperation	Competition No Feedback	Win	Lose	Average
NEAR	$.17^{a}$	3.75^{b}	11.58^{e}	13.75^{b}	1.00^{a}	6.05
RANDOM	2.83^{b}	3.67^{b}	5.33^{e}	7.08^{f}	5.08^{e}	4.63
FAR	5.42^{e}	7.63^{f}	8.08^{f}	10.75^{e}	8.67^{f}	8.08
Average	2.81	5.03	8.33	10.47	4.64	6.26

Note: Those means bearing common superscripts do not differ significantly at the p = .05 level using t-tests.

Table 1. Mean ingroup bias scores (ingroup score minus outgroup score) across conditions.

OUTERGROUP ORIENTATION

INTERGROUP SEATING PATTERN	Coaction	Cooperation	Competition No Feedback	Win	Lose	Average
NEAR	62.17_{a}	65.92_{b}	68.25_{c}	70.58_{d}	62.17^{a}	65.82
RANDOM	63.75^{a}	62.92^{a}	65.67^{b}	68.50^{c}	65.08^{b}	65.02
FAR	64.83^{ab}	66.58^{b}	68.58^{c}	69.50^{c}	65.08^{b}	66.92
Average	63.58	65.14	67.50	69.53	63.83	65.92

Note: Those means bearing common superscripts do not differ significantly at the p = .05 level using Neuman-Keuls analysis.

Table 2. Mean evaluation ratings of ingroup across conditions.

INTERGROUP ORIENTATION

INTERGROUP SEATING PATTERN	Coaction	Cooperation	Competition No Feedback	Win	Lose	Average
NEAR	62.00[a]	62.17[a]	56.67[a]	56.83[a]	61.17[a]	59.77
RANDOM	60.92[a]	59.25[a]	60.34[a]	61.42[a]	60.00[a]	60.38
FAR	59.42[a]	58.95[a]	60.50[a]	58.75[a]	56.41[a]	58.83
Average	60.78	60.11	59.17	59.06	59.19	59.66

Note: Those means bearing common superscripts do not differ significantly at the $p = .05$ level using Neuman-Keuls analysis.

Table 3. Mean evaluation ratings of outgroup across conditions

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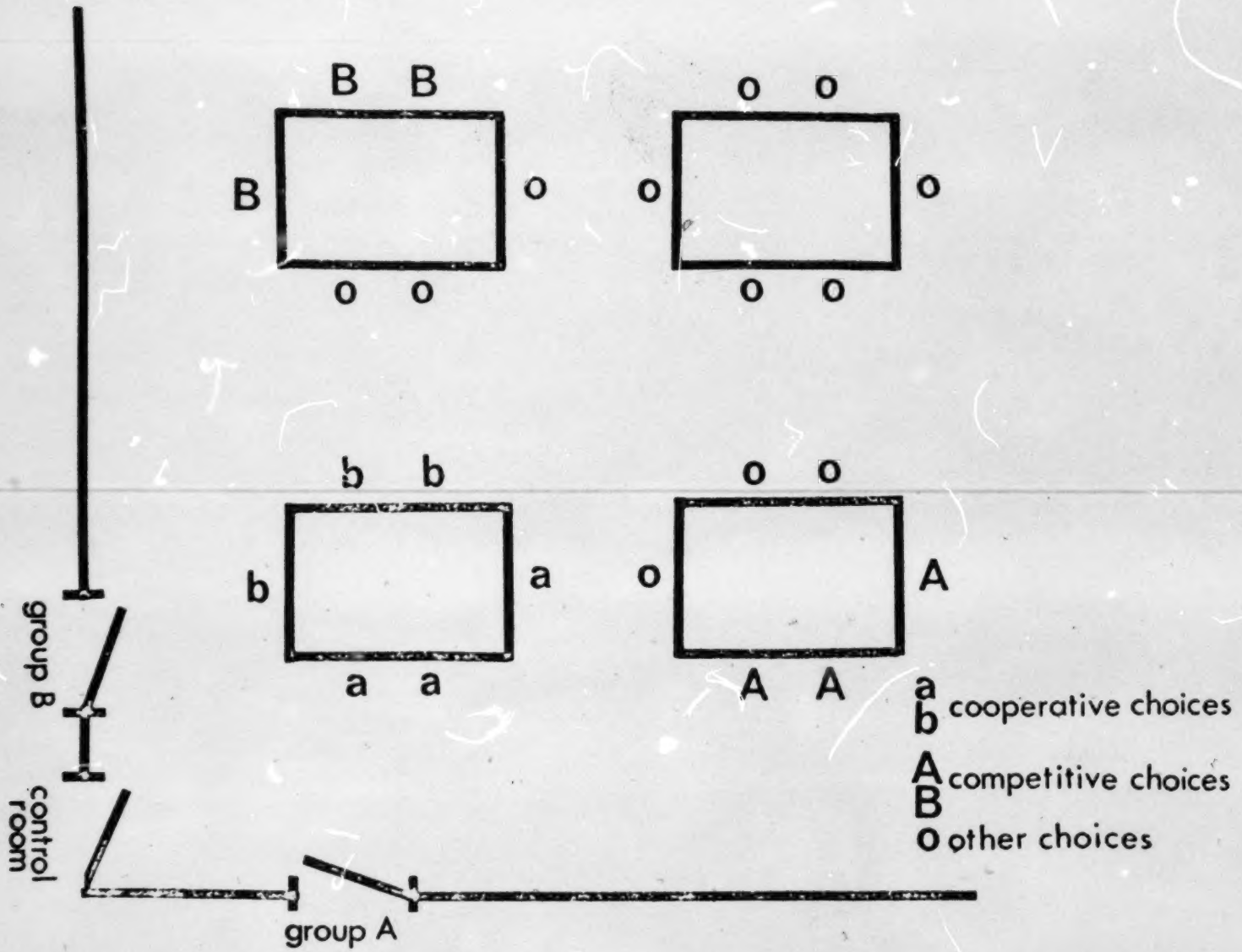

Figure 1. The experimental room and seating positions.